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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of: **S. Shinotsukaet al.** **Serial No.:** 10/693,204 **Filed:** October 24, 2003 **For:** OUTPUT COMPENSATING DEVICE AND METHOD OF AN IMAGE SENSOR	**Group Art Unit:** 2621 **Examiner:** Unknown

PETITION TRANSMITTAL

MAIL STOP: PETITION
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Transmitted herewith is a Petition Under 37 C.F.R. 1.182 To Accept Substitute Translation of PCT Claims.

We also enclose a SUBSTITUTE TRANSLATION OF PCT ORIGINAL CLAIMS.

Please charge Fulbright & Jaworski's Deposit Account No. **50-0337** in the amount of $130.00 for the Petition Fee Under 37 CFR 1.17(h).

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~~01 FC:1464 130.00 DA~~

Certificate of Mailing
(37 C.F.R. §1.8a)

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as First Class Mail in an envelope addressed to Mail Stop: Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Dated: April 29, 2005

By: Diane C. Smith
Diane C. Smith

The Commissioner is authorized to charge Fulbright & Jaworski's Deposit Account No. **50-0337** for any additional fees which may be required regarding this communication, and to credit any overpayments to said Deposit Account **50-0337**.

Respectfully submitted,

Fulbright & Jaworski LLP

Dated: April 29, 2005

By: _____
Conrad R. Solum, Jr.
Reg. No. 20,467

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PATENT TRADEMARK OFFICE

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7272-131/10312233

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Inventor: S. Shiotsuka et al.

Serial No.: 10/693,204

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For: OUTPUT COMPENSATING DEVICE AND METHOD OF AN IMAGE SENSOR

Group Art Unit: 2621

Examiner: Unknown

PETITION UNDER 37 C.F.R. 1.182 TO ACCEPT SUBSTITUTE TRANSLATION OF PCT CLAIMS

Applicant respectfully petitions the Commissioner under 37 C.F.R. 1.182, or whichever PTO Rule is appropriate, to accept a substitute English translation of the original Japanese PCT claims for the set of English language claims filed with this U.S. National Phase application on October 24, 2003. It is believed that this Petition is necessary for correcting an inadvertent error by the undersigned counsel for applicant to comply with 35 U.S.C. 371.

According to MPEP § 1002.02(p), paragraph No. 1, it would appear that it is appropriate for this Petition to be considered by the PCT Legal Administrator.

APPLICATION FILING HISTORY

This National Phase application was filed on October 24, 2003 with an English translation of the Japanese language PCT application PCT/JP02/03089 specification and abstract, as well as other formal papers. However, the claims 1-32 in English that were filed were not a

direct translation of the original claims 1-15 in the Japanese PCT application, but rather, the undersigned counsel for applicant prepared the new set of claims 1-32 that (a) incorporated claim amendments to original claims 1-15 for correcting errors and grammar, and (b) added method claims 16-32 which didn't appear in the PCT application. In essence, counsel for applicant incorrectly treated the claims of this National Phase application as a "Continuation" based on the PCT application by substituting what counsel believed were more appropriate claims for the U.S. without any "new matter." However, 35 U.S.C. 371 requires "a translation" of the entire international application, without claim amendments unless provided separately, for filing the National Phase, even though applicant is entitled to simultaneously file a Preliminary Amendment to revise the claims. This error by counsel was unintentional.

Counsel for applicant recently discovered the impropriety of filing a revised claim set as the "translation" of the PCT claims when, in connection with a separate National Phase application, counsel received a NOTIFICATION OF MISSING REQUIREMENTS UNDER 35 U.S.C. 371 (Form PCT/DU/EO/905) ("NOTICE") that required a new translation of the PCT application because "the number of claims in the International Application and the number of claims in the translation are not the same." No such NOTICE was received with respect to the subject application even though the PCT International Application had 15 original claims and this National Phase was filed with claims 1-32. This National Phase application did receive a "Notice To File Missing Parts of Nonprovisional Application" requiring an Oath or Declaration and additional fees, which has been accomplished.

RELIEF REQUESTED

Applicant petitions and requests that the attached SUBSTITUTE TRANSLATION OF PCT ORIGINAL CLAIMS be accepted and filed, as a substitute for the original claims 1-15

filed herein as though filed with the original National Phase application papers, and further, that the filing date of October 24, 2003 be retained, all for purposes of complying with 35 U.S.C. 371.

PROSECUTION HISTORY AND PROPOSED PRELIMINARY AMENDMENT

No Office Action on the merits has been received with respect to this application. In the event this Petition is granted, Applicants intend to immediately file a Preliminary Amendment that will amend the 15 claims in the attached SUBSTITUTE TRANSLATION OF PCT ORIGINAL CLAIMS to conform to the set of 32 claims that were filed with this application. Of course, if the Decision on petition directs Applicants to resolve this matter in some other manner, we will do so.

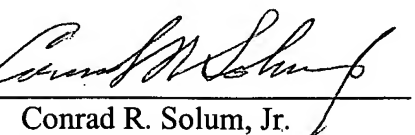
CONCLUSION

A favorable consideration of this Petition is respectfully requested. If the PTO official reviewing this wishes any further explanation of the situation or needs any further documentation, he or she is requested to telephone the counsel for applicant that will be responsible for this case hereafter namely, John D. McConaghy.

Respectfully submitted,

FULBRIGHT & JAWORSKI L.L.P.

Date: April 29, 2005

By 

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SUBSTITUTE TRANSLATION OF PCT ORIGINAL CLAIMS

1. An output compensating device of an image sensor using a number of light sensor circuits each representing a unit pixel and working by producing in a photoelectric converting element a sensor current proportional to a quantity of light falling thereon and converting the current into a voltage signal by using a sub–threshold region characteristic of a transistor having a logarithmic output characteristic in a weak inverse state and outputting a sensor signal corresponding to the converted voltage signal, which provides a means of enabling the image sensor to compensate for variation in each pixel output by using a sensor signal output from the corresponding light sensor circuit with shut–off incident light to the photoelectric element when a drain voltage and a drain voltage of the transistor is changed over to respective values lower than normal values for taking video by the image sensor.

2. An output compensating device of an image sensor as defined in claim 1, wherein a sensor signal obtained by changing the gain voltage and the drain voltage of the transistor of the light sensor circuit to respective values lower than the normal values for taking video corresponds to a sensor signal obtainable in a bright state when taking video and is gain–compensated to have a correct bright output level.

3. An output compensating device of an image sensor using a number of light sensor circuits each representing a unit pixel and working by producing in a photoelectric converting element a sensor current proportional to a quantity of light falling thereon and converting the sensor current into a voltage signal by using a sub–threshold region characteristic of a transistor having a logarithmic output characteristic in a weak inverse state and outputting a sensor signal corresponding to the converted voltage signal, which provides a means of enabling the image

sensor to compensate for variations in each pixel output by using a first sensor signal obtainable by setting a gate voltage and a drain voltage of the transistor with shut–off incident light to the photoelectric converting element to normal values when taking video by the image sensor and by using a second sensor signal obtainable by changing the gain voltage and the drain voltage of the transistor to values lower than the normal values when taking video.

4. An output compensating device of an image sensor as defined in claim 3, wherein the first sensor signal corresponding to a sensor signal obtainable in a dark state when taking video is used for offset compensation for variations in each pixel output level in the dark state and the second sensor signal corresponding to a sensor signal obtainable in a bright state when taking video is used for gain compensation for variation in each pixel output level in the bright state when taking video.

5. An output compensating device of an image sensor as defined in any of claims 1 and 3, wherein ranges of changing the gain voltage and the drain voltage of the transistor to be lower than the normal values when taking video are of zero to values determined by subtracting a threshold voltage of the transistor from the normal values respectively.

6. An output compensating device of an image sensor using a number of light sensor circuits each representing a unit pixel and capable of producing in a photoelectric converting element a sensor current proportional to a quantity of light falling thereon and converting the current into a voltage signal by using a sub–threshold region characteristic of a transistor having a logarithmic output characteristic in a weak inverse state and outputting a sensor signal corresponding to the converted voltage signal, which provides a means of enabling the image

sensor to compensate for variations in each pixel output by using a sensor signal obtained by conducting the transistor by changing its gate voltage and to a value higher than normal values when taking video.

7. An output compensating device of an image sensor as defined in claim 6, wherein a sensor signal obtainable by changing the gate voltage of the transistor to a value higher than the normal value when taking video corresponds to a sensor signal obtainable in the dark state when taking video and is used for offset compensation for variation in the pixel output in the dark state.

8. An output compensating device of an image sensor using a number of light sensor circuits each representing a unit pixel and working by producing in a photoelectric converting element a sensor current proportional to a quantity of light falling thereon and converting the current into a voltage signal by using a sub–threshold region characteristic of a transistor having a logarithmic output characteristic in a weak inverse state and outputting a sensor signal corresponding to the converted voltage signal, which provides means of enabling the image sensor to previously set a drain voltage of the transistor of each light sensor circuit to a value at which a sensor signal obtained by conducting the transistor with its gate voltage changed to a value higher than a normal value may correspond to a sensor signal obtainable in a dark state of the light sensor circuit with the normal gate voltage of the transistor when taking video, and thereafter perform compensation for variations in output of each pixel signal by using a sensor signal obtainable from the light sensor circuit by changing the gate voltage of the transistor with the preset drain voltage to a value higher than the normal value for taking video.

9. An output compensating device of an image sensor as defined in claim 8, wherein offset compensation for variations in dark–state output levels of pixel signals

is performed by using sensor signals obtainable by conducting the transistors with the drain voltage of the preset value and the gate voltage changed to a value higher than the normal value for taking video, which signals correspond to sensor signals obtainable in the dark state for taking video.

10. An output compensating device of an image sensor as defined in claim 9, wherein gain–compensation for variations in bright–state output levels of pixel signals is performed by using sensor signals obtainable by changing the gate voltage and the drain voltage of the transistor with shut–off incident light to the photoelectric converting element to values lower than the normal values for taking video, which signals correspond to sensor signals obtainable in a bright state for taking video.

11. An output compensating device of an image sensor as defined in claim 10, wherein ranges of changing the gain voltage and the drain voltage of the transistor to be lower than the normal voltages for taking video are of zero to values determined by subtracting a threshold voltage of the transistor from the normal gain voltage value and drain voltage value respectively.

12. An output compensating device of an image sensor using a number of light sensor circuits each representing a unit pixel and working by producing in a photoelectric converting element a sensor current proportional to a quantity of light falling thereon and converting the current into a voltage signal by using a sub–threshold region characteristic of a transistor having a logarithmic output characteristic in a weak inverse state and outputting a sensor signal corresponding to the converted voltage signal, which provides means of enabling the image sensor to compensate for variations in levels of respective pixel outputs in a dark state and a bright state by using as a dark–state pixel output a sensor signal obtained from each of the light sensor circuits when conducting the transistor with its gate voltage

changed to a value higher than a normal value and its drain voltage equal to a normal value for taking video and by using as a bright–state pixel signal a sensor signal obtainable by changing the drain voltage of the transistor to a value lower than the normal value for taking video.

13. An output compensating device of an image sensor using a number of light sensor circuits each representing a unit pixel and working by producing in a photoelectric converting element a sensor current proportional to a quantity of light falling thereon and converting the current into a voltage signal by using a sub–threshold region characteristic of a transistor having a logarithmic output characteristic in a weak inverse state and outputting a sensor signal corresponding to the converted voltage signal, which provides a compensating means for enabling the image sensor to previously set a drain voltage of the transistor to a value at which a sensor signal obtained when conducting the transistor by changing its gate voltage to a value higher than a normal value for taking video may correspond to a sensor signal obtainable in a dark state at a normal gate voltage of the transistor and thereafter to compensate for variations in dark–state output level of each pixel signal by using as the dark–state pixel signal a sensor signal obtainable by changing the gate voltage of the transistor to a value higher than the normal value as a dark–state pixel signal and for variations in bright–state output level of each pixel signal by using as the bright–state pixel signal a signal obtainable by changing the drain voltage of the transistor to a value lower than the preset value.

14. An output compensating device of an image sensor as defined in any of claims 12 and 13, which provides an initializing means for initializing each of pixels before taking video by discharging a charge accumulated in a parasite capacity of

each of the photoelectric elements by changing the drain voltage of the current–to–voltage converting transistor to a normal value for a specified period.

15. An output compensating device of an image sensor using a number of light sensor circuits each representing a unit pixel and working by producing in a photoelectric converting element a sensor current proportional to a quantity of light falling thereon and converting the current into a voltage signal by using sub–threshold region characteristic of a transistor having a logarithmic output characteristic in a weak inverse state and outputting a sensor signal corresponding to the converted voltage signal, which provides a means of enabling the image sensor to sample and hold sensor signals read in a time series from respective pixels, obtaining pseudo bright output signals by decreasing by a threshold value the normal drain voltages of the respective transistors corresponding to respective pixels, calculate a difference between each of the obtained pseudo bright output signals and the corresponding sensor signals temporarily stored in the sample–and–hold circuit and conduct the offset compensation of the previously set bright reference signal by using the determined difference as the offset value.